

Values Placed on Forest Property Benefits by Swedish NIPF Owners: Differences between Members in Forest Owner Associations and Non-members

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A forest property represents benefits to the owner, the nature of which varies between resident and non-resident owners. Forest owners' associations can be considered as an arrangement to increase the benefit from forest ownership by helping the forest owner to increase profitability. Thus, it can be assumed that associated forest owners value forest property benefits differently to non-associated owners. This study examines differences between members and non-members, and residents and non-residents, with respect to how they value the various forest property benefits. Responses from a landholder survey reveal differences concerning forestry income, maintaining contact with native locality, and keeping up a tradition in forestry. It is concluded that a challenge for the associations is to develop the organisation in accordance with the forest owners' dissimilar property interests.

Keywords: NIPF-owners, forest property benefits, forest owner cooperatives, associated forest owners

INTRODUCTION

For more than a century, forestry and the forest industry have been a major part of the Swedish economy, producing various benefits for the owners and society as a whole (The National Board of Forestry 1990, Kardell 2004). Efficient and valuable timber production has been an overall goal in forest policy. However, as a result of the revision of the *Forestry Act* in the early 1990s, environmental goals and timber production have been equally weighted when developing forest management policies and practices (Swedish Codes of Statutes 1979). Harvest operations are organised on either a large-scale (i.e. company or state forestry) or on a small-scale (i.e. farm forestry, NIPF) basis. Large-scale forestry is categorised by direct or

indirect connection to the wood-processing industry and management by a professional workforce. Small-scale operations usually have minor holdings (often including farmland) that are owned and managed by self-employed individuals or families who do not have their own wood-processing facilities. About half of the Swedish forest area is owned by approximately 100 large-scale organisations, and about half by 190,000 management units owned by about 350,000 individuals including NIPF owners (The National Board of Forestry 2004). Because the wood-processing industries generally consume more than can be delivered from their own forestland or associated forest companies, a demand exists for timber deliveries from NIPF owners.

In Sweden, the 19th century was characterised by forestry activities that were family-owned and family-operated, but during the 20th century this picture changed and larger forest enterprises were established (Stridsberg and Mattsson 1981, Glete 1987). This new industrial structure created a need for collaboration among the individual private forest owners to improve their often vulnerable position in relation to the wood processing industry. Their response was to organise into associations. A number of forest owners' associations were established between 1910 and 1925, improving the NIPF owners' bargaining situation in the timber market. These organisations also promoted improved silvicultural practices for NIPF owners (Andersson *et al.* 1980).

With the widespread decrease of agricultural farming, the increase in mechanisation of forestry operations, and the human migration from farms to urban areas, NIPF owners have become more and more heterogeneous in terms of their financial situation, operational and administrative activities, educational level and social conditions (Eriksson 1990). The number of agricultural holdings in Sweden has fallen by almost 40% during the last 25 years (Swedish Board of Agriculture 2004), whereas the number of forest management units has increased. Furthermore, the ownership structure is continuously changing and many of today's forest owners have grown up in an urban environment with limited possibilities to develop knowledge and practical skills in forestry (Swedish Government Official Reports 1992). For example, during the last three decades the shares of jointly-owned forest properties as well as the share of female forest owners have increased (Lidestav 1997). These changes in forest ownership, and the new demands from society on forestland for recreational purposes, conservation and other services, resulted in a growing interest in forest owners' attitudes and management behaviour.

In Sweden and other industrialised countries that are large timber producers, several studies have been carried out to identify private forest owner' motives. For example, Wiersum *et al.* (2005) examined NIPF owners in some European countries, while Ingemarsson's (2004) literature compilation on forest ownership illustrates various motives of private forest owners and demonstrates that forest owners usually have dissimilar sets of motives. Hugosson and Ingemarsson (2004) identified 16 motives for NIPF owners and grouped these into four categories, namely utilities, amenities, conservation and economic efficiency. They noted that forestry activities are influenced by a number of motives and that conservation and amenity motives as well as tax planning objectives play an important role in the forest management planning process in Sweden. Bliss and Martin (1989) and Törnqvist (1995) concluded that the forest property could be an arena of timber production as well as recreational activities where the owner and their family can

enjoy time together and create a common identity. Carlén (1990) drew comparisons among categories of forest owners and concluded that residing on forest property can affect how various forest utilities (monetary and non-monetary) are valued. His study showed that resident farmers rank agricultural income highest while non-resident owners rank their forest income highest. Generally, monetary goods are ranked higher among resident forest owners than in the other categories.

Irrespective of how forest owners understand their ownership, they are individuals trying to maximise the value of their economic right¹. This assumption is useful directly in the analysis of individual behaviour and also indirectly as the assumption that underlies the functioning of organisations, according to Barzel (1997). This implies that individuals will act to enhance the value of their rights, and they will do so regardless of whether they are operating in families, firms or in other organisations (Barzel 1997).

Forest Owners' Associations in Sweden

Forest owners' associations (or forest owners' cooperatives)² can be considered as a means for the individual private forest owners to increase their benefit from forest ownership by offering them forestry-related information (for example regarding silviculture and the timber market) and assuring a market for their forest products. In Sweden, however, there are a number of forest actors who are all eager to serve the private forest owner and offer comparable services (Törnqvist 1995). The associations' main function today is to provide a competitive means to market timber. They act as wood brokers for members and non-members, offering forest management planning and tax advice and undertaking silvicultural activities. The association can manage all activities of the property. To become a member, the forest owner invests in a capital share based on the property's rateable value where each SEK1000 equals one share (Kittredge 2003). This capital investment corresponds to less than €6000 for an average property of 50 ha (The National Board of Forestry 2004). To coordinate non-commercial business actors, the associations have established an umbrella organisation, namely the Forestry Branch of the National Farmers' Association. This organisation is charged with several responsibilities: to influence economic policy, to work for an efficient timber market, to develop the long-term timber supply, and to streamline the forest property through counselling and providing the forest owners with information (Forestry Branch of the National Farmers' Association 2005). Table 1 provides a brief presentation of the four associations that are connected to the Forestry Branch of the National Farmers' Associations in Sweden.

¹ An economic (property) right is defined by Barzel (1997, p. 3) as 'the right an individual has over a commodity or an asset ... the individual's ability in expected terms to consume the good directly or indirectly through exchange'.

² In this paper, the expressions 'forest owners' associations' and 'forest owners' cooperatives' are used as synonyms. A cooperative can thus be defined in an economic sense as 'an organisation in which a group of individuals or businesses undertake to supply one or more production inputs or services to productive enterprise in exchange for a share of the resulting surplus ... or alternatively, as a productive enterprise from which a group of individuals or businesses obtain a particular production or consumption good or service at a price that captures the economic surplus of the enterprise producing it' (Condon and Vitaliano 1983, pp. 30-31).

Table 1. Associated members and forestland connected to the forest owners' associations and estimated share of forestland area in corresponding region

Association	Number of members	Associated forestland ³	Processing industries
Norrbottens läns Skogsägare and Norra Skogsägarna ⁴	12,277	Norrbottens läns skogsägare 30 % and Norra Skogsägarna 50%	Four processing industries (sawmills, planing mills)
Skogsägarna Norrskog	13,183	60%	Seven processing industries owned by a subsidiary (sawmills, planing mills)
Mellanskog	27,525	50%	Part-owner in Setra Group AB, which owns wood processing industries (sawmills, planing mills)
Södra Skogsägarna	34,777	50%	Five pulp mills (three in Sweden and two in Norway) and 10 processing industries (sawmills, planing mills)
All associations ⁵	87,762		

Source: Forestry Branch of the National Farmers' Association (2004).

There are four major forestry associations in Sweden and they operate in distinct geographical areas. The associations are further divided into smaller districts that consist of 150 to 300 owners. Each of these districts has an elected board (Kittredge 2003). According to the *Competition Act*, the associations are not allowed to restrict or complicate a member's mobility in the market. For example, a member who supplies raw material can join any association or sell to any buyer, even if they are a member of a particular association (Swedish Government 1992-1993, Swedish Government 1999-2000, Swedish Codes of Statutes 1993). Nearly 90,000 forest owners now belong to a forest owner association. In total, the associations manage more than 20 sawmills, and one association operates three pulp mills in Sweden (and two in Norway). In 2003, the pulp mills produced 2 Mt of pulp while the total production of the sawmills was 1.6 M m³ (Forestry Branch of the National Farmers' Associations in Sweden 2004). The total production in Sweden during 2003 comprised of 11.8 Mt pulp and 16.7 M m³ sawn goods (Forest Industries 2004).

Rickenbach *et al.* (2004, p. 9) concluded that joining an association secures 'a voice in a larger policy debate'. After studying two forest owner associations in southwest Wisconsin, these authors concluded that members place greater importance on ecological benefits than non-members, are more active in their forest management, and are more amenable to cross-boundary cooperation with neighbours.

³ The share of associated forestland has been calculated by using the area of forestland by age class within the ownership categories and counties during the period 1997 to 2001 (The National Board of Forestry 2004).

⁴ The two associations merged on 1 September 2005.

⁵ In the 1970s the number of members in the then 10 major forest associations was 112,000, according to Drakenberg *et al.* (1978).

The characteristics of NIPF ownership, forest owners' motives and benefits, and the alignment of the forest owners' associations, make it possible to assume that associated forest owners differ from non-associated owners in their valuation of owner benefits. With this in mind, this study aimed to identify and describe these differences between members and non-members and explore membership expectations. Residence alternative for the forest owner was chosen because place of living seems to affect how the benefits are valued (cf. Carlén 1990). The forest owners were divided into four groups in order to make comparisons between resident members and resident non-members, non-resident members and non-resident non-members. In this study, forest property benefits are defined as follows: forestry income, hunting and fishing, picking berries and mushrooms, the availability of firewood and timber for own use, residence/housing, outdoor life and recreation activities, maintaining contact with the native locality, and keeping up a tradition in forestry.

RESEARCH METHOD

Definition of Population and Sampling Method

The initial population consisted of all Swedish forest owners aged between 18 to 80 years, representing 190,995 forest properties. The population was divided into 18 strata, defined by all combinations of property size (three classes) and ownership situation (six classes). The ownership situation was defined in terms of number of owners (one or more than one), and gender of owners (whether all were male, or female, or both gender were present). The set of properties with both gender present was divided into two equally large classes (by number), a 'male' class and a 'female' class. In each of the 18 strata, a simple random sample of properties was taken and within each sampled property an owner was selected – a male owner in the male strata and a female owner in the female strata. The target population thus consisted of one representative from each of the 190,995 properties, and a stratified random sampling design was adopted. The strata sizes varied between 85,196 and 5,934 properties, and the sample sizes varied between 310 and 30. The total sample size was 2,500. Questionnaires were administered through a postal survey, the sampling design and its execution being managed by Statistics Sweden.

Response Rate, Testing for Non-response Bias, and Group Membership

The final number of acceptable responses was 1,500, a total response rate of 60%, varying between 50% and 70% for the 18 strata. Respondents and non-respondents were compared in terms of age and property size. The estimated differences were small (1.3% for age and 2.1% for property size), and a t-test did not detect significant differences between means for these variables.

Of the 1,500 respondents, 735 answered that they were members of a forest owners' association, 696 were non-members, 57 did not know and 12 did not answer this question. It should be pointed out that these response frequencies have to be weighted according to the strata sampling fraction to estimate population relative frequencies.

Comparisons and Statistical Methods

Comparisons were made between the categories of members and non-members, residents and non-residents, and combinations of these two groupings. The main comparisons were made with respect to respondents' valuations of forest benefits. In addition, the categories were compared with respect to age, owner situation and property size. It was not possible to assess the exact number of NIPF owners in each category, because membership is based on property-level and residence is based on individual-level.

Statistical comparisons were made between the population ratios $R_{ik} = Y_{ik}/X_k$, where Y_{ik} is the number of population members in category k that choose alternative i and X_k is the total number of members in category k . The numerators and denominators were estimated with the sum over strata of the within-stratum scaled-up number of the sample answers for k and i (with scaling factors according to population and sample sizes). The estimators are (approximately) unbiased under the assumption that the non-respondents behave like the respondents. Variances and covariances of the estimators \hat{R}_{ik} were estimated according to standard formulas for ratio estimators in stratified sampling, as explained for example in Raj (1968).

The comparisons made can all be written as hypotheses about contrasts in the R_{ik} . For example, the question of whether there is a population difference in the response rate on the i^{th} alternative between K categories is formulated as testing the null hypothesis $H_0 : R_{ik} = R_i$ for $k = 1, \dots, K$ (where R_i is the common rate) against the alternative hypothesis that the ratios differ. The null hypothesis consists of a vector of (linear combinations) of R_{ik} , the estimator of which is represented by \mathbf{z} . If \mathbf{C} is the matrix of the estimated variances and covariances of \mathbf{z} , then the statistic $T = \mathbf{z}' \mathbf{C}^{-1} \mathbf{z}$ is, under the null hypothesis, approximately X^2 distributed with degrees of freedom equal to the number of linearly independent contrasts. This test statistic is of the Wald type (e.g. see Agresti 1990, p. 461). Significant difference between categories is declared if T exceeds the critical (upper) 5% level of the X^2 distribution.

The classification of the forest owners as resident members, resident non-members, non-resident members and non-resident non-members suited the aim of this study. It is possible that the different benefits do not reflect all possible alternatives that forest ownership includes, but the ones chosen have frequently been used in studies of private forest owners. In addition, placing benefits on a rating scale and choosing between the alternatives could have given rise to some difficulties for informants. It is also likely that the chosen sampling design affected the distribution of the answers from the NIPF-owners. One special feature of this study was that it was possible for any of the forest owners with jointly owned properties to be selected in the sample. Usually, it is the official representative for the property that is given this opportunity. However, the sampling design created a problem for statistical testing, in that membership is defined at the property level, whereas residence alternative is connected to the individual that completed the questionnaire.

RESULTS FROM THE ANALYSIS OF SURVEY RESPONSES OF NIPF-OWNERS

This section reports findings concerning the various categories of forest owners and their evaluation of the various forest benefits. Owner characteristics such as owner's age, size of property, and ownership composition (e.g. number of owners for each property) are also reported across the categories. A 5% significance level is adopted.

As indicated in Table 2, no differences between groups were detected with respect to mean age ($p = 0.087$), the means for each category being in the low 50s.

Table 2. Mean age for the NIPF-owner categories

Category	Mean age (years)	P-value	X^2 df = 3
Resident member	52.68	0.087	6.580
Resident non-member	53.30		
Non-resident member	53.85		
Non-resident non-member	55.31		

The analysis of the mean property sizes among the categories shows that at least one of these differ from the others (Table 3). Resident owners have the largest properties (68.5 ha) whereas resident non-members have the smallest properties (average 44.0 ha). Generally, the means vary between categories ($p = 0.000$), with members having larger properties than non-members.

Table 3. Mean values of property sizes (ha) for the NIPF-owner categories

Category	Mean property size (ha)	P-value	X^2 df = 3
Resident member	68.53	0.000	37.548
Resident non member	44.04		
Non resident member	58.48		
Non resident non member	48.09		

Ownership composition differs between categories, with at least one category differing from the others ($p = 0.000$). Among the resident members, single ownership is the most common (52.1%) and joint ownership with other than family members or relatives is the least common. Most of the resident non-members own the property together with their husband or wife (46.2%), and the next most common is single ownership. Within the category of non-resident members, most properties were owned by a single owner, with joint ownership with family members or relatives the second most common (37.0%) and this is also true for non-resident non-members. It seems that residency, not membership, is related to owner composition (Table 4).

Table 4. Distribution of ownership composition for NIPF-owner properties

Category	Single ownership (%)	Joint ownership with spouse (%)	Joint ownership with family members or relatives (%)	Joint ownership with others (not family members/relatives) (%)	P-value	χ^2 df = 9
Resident member	52.05	36.24	10.82	0.89	0.000	188.79
Resident non-member	45.20	46.18	8.25	0.37		
Non-resident member	46.39	15.01	36.96	1.64		
Non-resident non-member	46.56	16.98	34.17	2.29		

Resident Forest Owners and their Valuation of Forest Property Benefits

As indicated in Table 5, there is a significant difference between members and non-members among the resident owners as to how the benefit forest income is valued ($p = 0.001$). Maintaining contact with native locality and keeping up a tradition in forestry are other benefits that show a dissimilar valuation pattern by members and non-members ($p = 0.006$ and $p = 0.000$). Concerning the benefits – hunting and fishing, picking berries and mushrooms, the availability of firewood and timber for own use, residence and outdoor life and recreation – no significant difference between categories were found. Some benefits were valued highly by both residents and non-residents, e.g. outdoor life and recreation, and firewood and timber for own use. In addition, some benefits were not valued similarly by residents and non-residents. Residents set a high value on forestry income and residence; non-residents find the benefit of native locality of major importance.

Table 5. The valuing of forest property benefits among members and non-members within the category of resident owners

Forest property benefit	Category	Not important (%)	Slightly important (%)	Quite important (%)	Important (%)	Very important (%)	χ^2 df = 4	P-value
Forestry income	Members	2.88	19.91	20.36	26.50	30.35	19.9154	0.001
	Non-mbrs	12.43	26.68	16.12	25.47	19.31		
Hunting and fishing	Members	24.11	25.37	17.77	21.42	11.33	3.3350	0.503
	Non-mbrs	28.85	22.13	18.11	16.68	14.22		
Berries and mushrooms	Members	24.23	27.52	26.85	14.43	6.97	1.6794	0.794
	Non-mbrs	27.29	29.67	21.55	14.25	7.25		
Firewood and timber	Members	4.11	6.43	15.46	34.81	39.18	0.7891	0.940
	Non-mbrs	3.27	6.92	17.49	32.16	40.16		
Residence/housing	Members	1.96	3.15	10.68	32.39	51.81	7.4723	0.113
	Non-mbrs	5.83	1.20	14.38	26.49	52.10		
Outdoor life and recreation	Members	2.93	10.36	20.40	37.22	29.09	6.7747	0.148
	Non-mbrs	6.35	8.23	24.50	27.62	33.30		
Native locality	Members	8.54	17.86	19.67	34.89	19.04	14.5440	0.006
	Non-mbrs	18.83	14.11	24.71	22.95	19.40		
Tradition in forestry	Members	5.72	14.14	25.14	33.35	21.65	20.188	0.000
	Non-mbrs	18.88	19.56	18.74	25.10	17.72		

Non-resident Forest Owners and their Valuation of Forest Property Benefits

Among non-residents, the priority of forestry income as a benefit differs significantly between members and non-members ($p = 0.037$) (Table 6). Concerning the other benefits, no significant difference has been detected between members and non-members. The non-resident members find keeping up a tradition in forestry and forestry income highly important. The non-members rated maintaining contact with native locality and hunting and fishing also highly important. The benefits of outdoor life and recreation, the availability of firewood and timber for own use was seen as highly important within both categories.

Table 6. The valuing of forest property benefits among members and non-members within the category of non-resident owners

Forest property benefit	Category	Not important (%)	Slightly important (%)	Quite important (%)	Important (%)	Very important (%)	X^2 df = 4	P-value
Forestry income	Members	6.07	27.09	22.64	24.30	19.90	10.2059	0.037
	Non-mbrs	11.94	33.57	25.55	17.52	11.43		
Hunting and fishing	Members	24.40	25.26	16.75	16.46	17.13	0.3612	0.986
	Non-mbrs	26.82	24.16	17.40	15.96	15.66		
Berries and mushrooms	Members	24.71	32.21	23.34	12.26	7.48	0.7870	0.940
	Non-mbrs	28.36	31.21	21.64	12.58	6.21		
Firewood and timber	Members	9.74	15.33	23.80	26.02	25.11	8.5980	0.072
	Non-mbrs	17.63	20.99	21.13	20.65	19.61		
Residence/housing	Members	34.01	12.49	18.34	18.74	16.43	5.9757	0.280
	Non-mbrs	34.31	21.10	16.40	16.83	11.36		
Outdoor life, recreation	Members	8.57	8.28	27.81	27.47	27.88	2.1334	0.711
	Non-mbrs	10.17	10.82	22.43	30.55	26.04		
Native locality	Members	13.96	13.82	25.75	24.51	21.96	1.0920	0.896
	Non-mbrs	18.34	13.26	24.10	22.73	21.57		
Tradition in forestry	Members	9.45	14.85	27.42	27.05	21.23	7.0771	0.132
	Non-mbrs	16.02	18.05	27.62	25.26	13.05		

Members and their Valuation of Forest Property Benefits

Concerning the comparison within membership, between resident and non-resident members, the valuing of benefits differs (Table 7). The value placed on residence and the availability of firewood and timber for own use differ significantly ($p = 0.000$). Place of residence is valued higher among residents, as are firewood and timber for own use. There are no significant differences between the categories for the other benefits. Resident members regarded residence, availability of firewood and timber for own use, forest income, and outdoor life and recreation as highly important. Non-residents stated that outdoor life and recreation, firewood and timber for own use, maintaining contact with native locality and keeping up a tradition in forestry are highly important.

Table 7. The valuing of forest property benefits among residents and non-residents within the category of members

Forest property benefit	Category	Not important (%)	Slightly important (%)	Quite important (%)	Important (%)	Very important (%)	X^2 df = 4	P-value
Forestry income	Residents	2.88	19.91	20.36	26.50	30.35	9.1896	0.057
	Non-residents	6.07	27.09	22.64	24.30	19.90		
Hunting and fishing	Residents	24.11	25.37	17.77	21.42	11.33	3.1613	0.531
	Non-residents	24.40	25.26	16.75	16.46	17.13		
Berries and mushrooms	Residents	24.23	27.52	26.85	14.43	6.97	1.5347	0.820
	Non-residents	24.71	32.21	23.34	12.26	7.48		
Firewood and timber	Residents	4.11	6.43	15.46	34.81	39.18	23.7779	0.0000
	Non-residents	9.74	15.33	23.80	26.02	25.11		
Residence/housing	Residents	1.96	3.15	10.68	32.39	51.81	94.7054	0.0000
	Non-residents	34.01	12.49	18.34	18.74	16.43		
Outdoor life and recreation	Residents	2.93	10.36	20.40	37.22	29.09	9.3994	0.052
	Non-residents	8.57	8.28	27.81	27.47	27.88		
Native locality	Residents	8.54	17.86	19.67	34.89	19.04	8.1675	0.086
	Non-residents	13.96	13.82	25.75	24.51	21.96		
Tradition in forestry	Residents	5.72	14.14	25.14	33.35	21.65	3.3453	0.502
	Non-residents	9.45	14.85	27.42	27.05	21.23		

DISCUSSION AND CONCLUSIONS

In comparison with resident non-members, resident members tend to place higher values on forest income, keeping contact with native locality and the preservation of a tradition in forestry. The non-resident members tend to value forestry income higher than non-resident non-members. Significant differences are found between resident and non-resident members concerning residence and the availability of firewood and timber for own use. Resident members generally owned larger properties than the other groups examined. Concerning age, no significant difference was found between the categories. The distribution of number of owners for properties differs; single ownership was most common among all categories except among resident non-members, who generally owned the property together with their spouse. The next most frequent ownership structures among non-resident were jointly owned properties by other family members or relatives and among residents owning together with a spouse.

This study confirms the hypothesis that members in forest owner associations (or forest owner cooperatives) differ from non-members concerning the values they place on various types of forest benefits, and that differences can be found between residents and non-residents. These results are similar to findings by Rickenbach *et*

al. (2004) that show differences between members and non-members, and Carlén (1990) that concluded that monetary benefits are more often valued higher by residents than by non-residents.

In this comparison between members and non-members it was indicated that residents, both members and non-members, regard residence, availability to firewood and timber for own use, forestry income and outdoor life and recreation, and native locality highly important. Non-residents, on the other hand, place high value on outdoor life and recreation, maintaining contact with native locality, the availability of firewood and timber for own use, and keeping up a tradition in forestry. Ownership of a forest property entails a wide range of different benefits. A prominent result from this study is thus the high ranking of the benefits of maintaining contact with a native locality and keeping up a tradition in forestry. This finding is similar to that of Bliss and Martin (1989) and Törnqvist (1995), who emphasised the viewing of the forest property as a family project.

This discussion has been concentrated on describing the benefits for NIPF-owners. If these benefits reflect the owners' interest in forest ownership, what implications does this have for the forest owners' associations? It is also of interest to explore how the changing ownership structure, as observed by Eriksson (1990) and Lidestav (1997), affects the perception of forest ownership. Although there are no indications of continuing fragmentation of forest holdings, it is obvious that the number of forest owners on each forest management unit is increasing. This changing ownership structure will also affect the benefit of membership and the ownership of a cooperative organisation, since the aim is to maximise the value of a right, irrespective of whether this concerns operation in markets, families or organisations, as noted by Barzel (1997).

NIPF-owners appear to be heterogeneous in terms of residence, size of property and ownership composition, but members in associations tend to value the forest property benefits similarly, irrespective of whether they are residents or non-residents. It seems that associations serve a particular type of forest owners, i.e. those who are interested in gaining income from their forest. The goals of the forest owners' associations are to work for an efficient timber market and through counselling optimise the individual's economic value of the forest property. This study has confirmed that members value forestry income more highly than non-members. However, if these goals of the association for the forest owners do not correspond to the goals of the individual owners for their forests, then the forest owners will not be interested in membership. The fact remains that the membership consists of both residents and non-residents. Residents consider benefits that could be considered as monetary as highly important whereas non-residents identified more non-monetary benefits as highly important. However, it must be noted that few statistical differences in valuation patterns were detected, except concerning residence, firewood and timber for own use. This alignment of interest, that the NIPF-owners have several preferred benefits, is an issue which forest owners' associations need to consider.

A further challenge for the associations is that their capital investment is small and that forest owners are free to choose their timber buyer, which means that the financial commitment to the association can be weak. In addition, forestry ownership includes more than monetary benefits. Wiersum *et al.* (2005), for example, noted that many forest owners in some European countries do not consider

financial objectives as being of high importance, and regard objectives related to environment and landscape as more important. Therefore, is it likely that membership and also ownership in an association (or a cooperative) could result in more than monetary benefits alone.

If the associations are interested in increasing their membership or volumes of timber delivered, then perhaps a revised corporate image that meets the expectations of more private forest owners is required. To address this issue, the associations could place greater focus on providing services and emphasise their knowledge concerning forestry and forest ownership. For example, the forest owners' associations can focus on intangible benefits or networking and support for personal values as Tiles *et al.* (2004) suggested. Until now, the associations have positioned themselves towards the forest owners as a means to achieve profitability, but with knowledge about how various owner categories value property benefits, the associations can develop strategies that address more closely the needs of the private forest owners.

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